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MINERAL COLLECTING IN VIRGINIA Arthur A. Pegau

Introduction

The Virginia Division of Geology receives approximately thirty requests each month for information on minerals and rocks in Virginia. Because of this widespread interest, this preliminary article has been prepared for publication in Virginia Minerals. Later, it is planned to publish, as an Information Circular, a more comprehensive report on the minerals and rocks of the State.

In this article various definitions of the term mineral are discussed. This is followed by a consideration of the various kinds of interests taken in minerals, and finally a few of the well-known mineral localities are listed and specific directions given as to how they can be reached.

Definition

The term mineral has many connotations, three of which are considered. These three may be designated as the philosophical, the utilitarian and the scientific concepts. According to the philosophical concept, all matter is divided into three kingdoms. These three kingdoms are: the animal, the vegetable and the mineral. The term mineral, according to this concept, is nearly synonymous with the term inorganic. The term mineral is used in this sense when one refers to the mineral matter in coal or in water; a further use of this term is seen in the word "vitamin," which means "life mineral."

The term mineral, according to the utilitarian concept, is used to include anything dug out of the earth that is of economic value. In this sense, the term is more nearly synonymous with mineral resource. As used in this sense the term may refer to a mineral, as hematite, rutile, etc.; a rock, as limestone, sandstone, granite; an element, as iron, titanium, manganese; an organic substance, as coal, oil, gas; a fossil, as diatomite (a sub-

stance made up essentially of the siliceous remains of diatoms). The term mineral, in the publication in which this article appears, is ordinarily used in the utilitarian sense. (Note the titles of the following issues of Virginia Minerals: Vol. 1, No. 2, Oil and Gas, Vol. 1, No. 3, Ground Water, Vol. 1, No. 4, Uranium).

A mineral, according to the scientific concept, may be defined as a solid substance of definite chemical composition, occurring in nature and not of apparent organic origin, whose chemical and physical characteristics vary between rather definite limits. In this article the term mineral is used in the scientific sense.

Study of Minerals

The study of minerals, according to the scientific concept, may be from two general standpoints: (1) One that corresponds to the study of rocks known as petrography; (2) the other that corresponds to the study of rocks known as petrology. The study of minerals that corresponds to petrography is one that involves descriptions, identification and classification. A study, according to this concept, can be found in most of our standard textbooks on mineralogy. The study of minerals that corresponds to petrology involves the origin of minerals, the mode of occurrence of minerals, and the relationship between different minerals and rocks. The origin of rock-forming minerals incidentally is discussed in petrology, whereas the origin of ore minerals generally is to be found in the textbooks and articles on economic geology.

Mineral Collecting

In the first part of this paper, the interest in minerals from both the utilitarian and the scientific standpoint has been discussed. Now the interest in minerals from the standpoint of the collecting

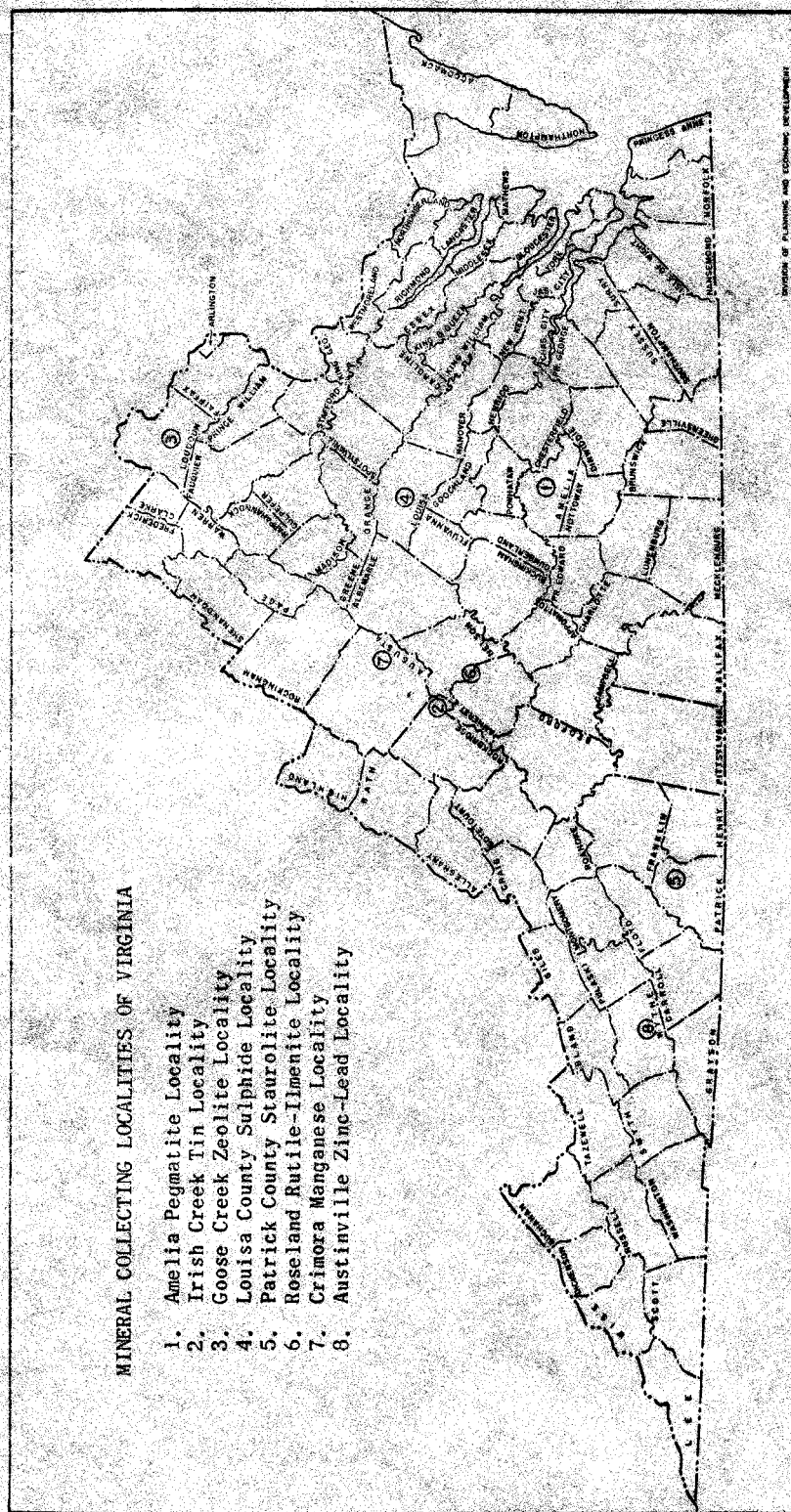


Figure 1.
Index map of Virginia showing the principal mineral collecting localities.

and preservation of mineral specimens will be taken up. The collecting and preservation of mineral specimens may be described as a hobby or an avocation, rather than a vocation. The essential thing to be remembered about a hobby is that one pursues it for pleasure rather than for profit. As soon as one considers a hobby from the standpoint of profit, the hobby becomes a business.

There are many features of hobbies in general that apply to the hobby of mineral collecting. Some hobbies have special names, for example, philately for stamp collecting, numismatics for coin collecting, and "spelunking" for cave study. Unfortunately, there appears to be no name for mineral collecting or mineral collectors.

Mineral collectors, as in the case of other collectors, include people in all walks of life whose common interest is minerals. They may collect as individuals or groups. Groups of mineral collectors often organize themselves into mineral clubs or mineral societies. One of the best known mineral organizations in the South is the Georgia Mineral Society, organized in 1935. In this particular society there is a special section for gem collectors.

Preservation of Mineral Collections

One of the important essentials in mineral collecting is the preservation of specimens after they have been collected. The writer was delighted, during a recent visit to Atlanta, Georgia, to be able to see, in an excellent state of preservation, beautiful crystals of rutile that had been collected many years ago from Graves Mountain.

Unfortunately, there have not always been adequate provisions made for preserving minerals after they have been collected. As a consequence, many fine specimens that have been collected in the State have remained in the possession of the collector or have found their way into museums or the collections of colleges and universities outside of the State. Many specimens have either been lost or destroyed.

It is suggested that a concerted effort be made to establish in Virginia a central location for preserving mineral collections. It is felt that the mineral collector would take a greater interest in collecting were he assured of a place where his specimens could be preserved for future generations; also, if such a place should be established, minerals would flow there in a steady stream through the years.

Value of Mineral Collections

In Virginia, there occur many minerals that are rare. It is very important that specimens of these be preserved, not only for future generations to see, but to study.

Then there are minerals that are not particularly rare but are considered to be of scientific interest only. One of these is vermiculite.

Vermiculite, once considered to be of only scientific importance in the State, is now considered one of the State's potential mineral resources. A study is being made of this mineral by one of our staff members, Dr. Edwin O. Gooch. The preliminary results of this investigation were published in Virginia Minerals, Vol. 3, No. 1.

Another mineral on which there is very little information is the clay mineral, montmorillonite. A mineral considered of only scientific value today may become a very important mineral tomorrow. This was the case of the mineral ilmenite, as was pointed out in our Information Circular No. 5.

Mineral Collecting Localities

There are a number of mineral collecting localities in Virginia. In this paper, however, only some of the better known ones, including the following, are considered: The Amelia County pegmatite locality, the Irish Creek tin locality, the Goose Creek zeolite locality, the Louisa County sulfide locality, the Patrick County staurolite (fairy stone) locality, the Roseland rutile-ilmenite locality, the Crimora manganese locality and the Austinville zinc-lead locality.

Under each of these localities, general directions are given for reaching the area and pertinent references to the literature are cited.

A more comprehensive treatment of this subject, including the mineral localities in Virginia omitted from this report and lists of the more important minerals reported from each locality, will be given in an Information Circular to be published later.

Amelia County Pegmatite Locality

One hundred minerals have been reported as occurring in pegmatite deposits in Virginia. Many of these minerals have been found in two mines in Amelia County--the Rutherford mine, first operated in the early 1880's, and the Morefield mine opened in 1929.

Both the Morefield and Rutherford mines can be reached from Richmond, Virginia, by proceeding southwest along U. S. Route 360 for about 35 miles to State Road 628, thence east for about one mile. The Morefield mine is located in a wooded area about one mile north of State Road 628. The Rutherford mine is located on the Kiener property, and can be reached from U. S. Route 360 by turning west on State Road 609 and proceeding for about one mile, then turning left on a farm road which leads to the Kiener house. The Rutherford mine is on a stream just below the house.

Complete descriptions of the minerals occurring in these deposits are given in the following references:

Pegau, A. A., 1928, The Rutherford mines, Amelia County, Virginia: Am. Mineralogist, vol. 13, no. 12, pp. 583-588.

Pegau, A. A., 1932, Pegmatite deposits of Virginia: Virginia Geol. Survey Bull. 33, pp. 50-61.

Glass, J. J., 1935, The pegmatite minerals from near Amelia, Virginia: Am. Mineralogist, vol. 20, pp. 741-768.

Lemke, R. W., Jahns, R. H., and Griffiths, W. R., 1952, Mica deposits of the southeastern Piedmont: Part 2, Amelia District, Virginia, U. S. Geol. Survey Prof. Paper 248-B, 130 pp.

Irish Creek Tin Locality

This locality is known for the occurrence of cassiterite and associated minerals. It is near Irish Creek village which can be reached by proceeding south along the Blue Ridge Parkway to its intersection with State Highway 56, thence south on State Road 603.

Approximately 50 minerals have been reported from the Irish Creek tin deposits, which are fully described in the following publications:

Ferguson, H. G., 1918, Tin deposits near Irish Creek, Virginia: Virginia Geological Survey Bull. XV-A, 19 pp.

Koschmann, A. H., Glass, J. J., and Vhay, J. S., 1942, The deposits of Irish Creek, Virginia: U. S. Geol. Survey Bull. 936-K, pp. 271-296.

Goose Creek Zeolite Locality

This locality is noted for the occurrence of zeolites and prehnites (a semiprecious stone). Between 80 and 90 minerals have been reported from these zeolite deposits, which are associated with diabase. These deposits are located in Loudoun and Fairfax Counties in northern Virginia, about 4 miles west of Leesburg near State Highway No. 7, and a few miles west of Centreville near U. S. Route 29.

The minerals occurring at this locality are fully described in the following publications:

Shannon, E. V., 1924, The mineralogy and petrology of intrusive Triassic diabase at Goose Creek, Loudoun County, Virginia: U. S. National Museum Proceedings, vol. 66, art. 2, 86 pp.

....., 1925, Mineralogy and petrography of Triassic limestone conglomerate metamorphosed by intrusive diabase at Leesburg, Virginia: U. S. National Museum Proceedings, vol. 66, art. 28, 31 pp.

Louisa County Sulfide Locality

Approximately 90 minerals have been reported from sulfide deposits in the Virginia Piedmont. Reports from recent mineral collectors indicate that about 25 minerals can be collected at the

present time in the vicinity of the town of Mineral. The best collecting area occurs along a ridge immediately northeast of Mineral.

The town of Mineral is located just north of U. S. Route 33 at the intersection of State Highway 22 and U. S. Route 522.

References to publications containing descriptions of minerals associated with sulfide deposits can be found in the selected bibliography of the article listed below:

Young, R. S., 1956, Sulfides in Virginia: Virginia Div. of Geol., Virginia Minerals, vol. 2, no. 1, p. 7.

Patrick County Staurolite Locality

The occurrence of staurolite, better known as "fairy stones," has been known in Patrick County for approximately half a century. The mineral occurs in Fairy Stone State Park, which can be reached by proceeding west from Danville, Virginia, along U. S. Route 58 to Martinsville, thence west along State Highway 57 to Fayerdale and from there along State Road 623.

The deposits are described in the two references listed below:

Roberts, J. K., 1934, Virginia staurolite as gems: Am. Mineralogist, vol. 19, pp. 549-552.

Moore, C. H., 1937, The staurolite area of Patrick and Henry Counties, Virginia: Am. Mineralogist, vol. 22, pp. 990-996.

Roseland Rutile-Ilmenite Locality

The Roseland locality is the best known in Virginia for titanium and associated minerals. In addition to the two principal minerals, rutile and ilmenite, some 30 minerals have been reported from titanium deposits. These deposits are interesting not only for the minerals occurring therein but also for the rock nelsonite which is made up principally of ilmenite and apatite.

This locality can be reached by proceeding 5 miles southwest of Lovingsston, which is on U. S. Route 29, thence west along County Road 650 to County Road 655. Turn right on County Road 655, which crosses the rutile deposit.

A full description of the minerals in this locality is given in the following publication:

Watson, T. L., and Taber, Stephen, 1913, Geology of the titanium and apatite deposits of Virginia: Virginia Geol. Survey Bull. 3-A, 308 pp.

A more recent bibliography on titanium appears in the following publication:

Pegau, A. A., 1956, Titanium: Virginia Div. of Mineral Resources, Mineral Resources Circular No. 5, 17 pp.

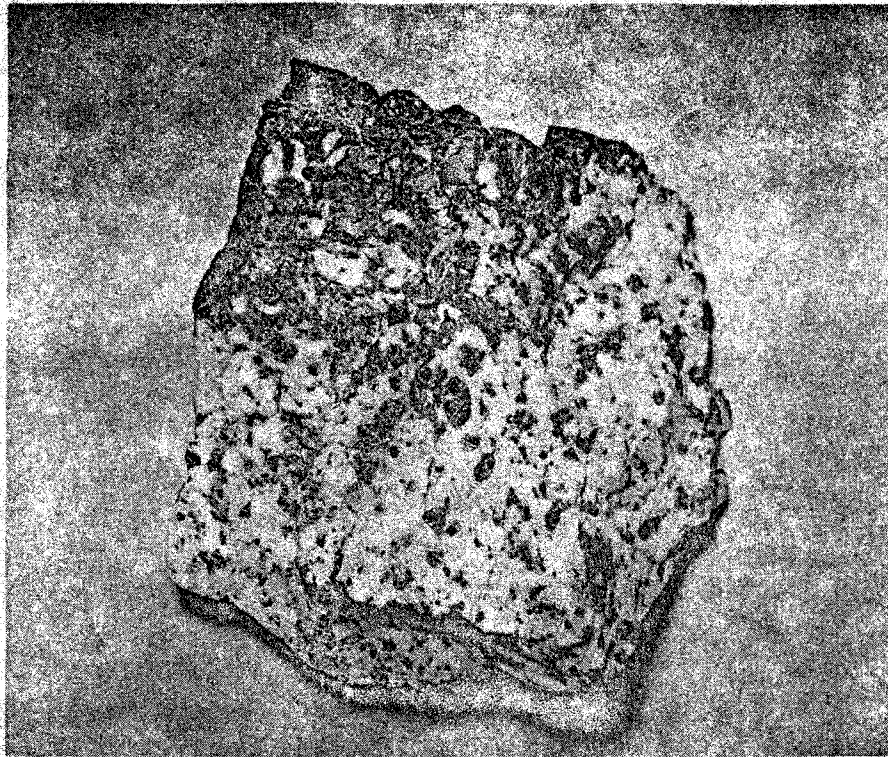


Plate 1. Rutile (black) disseminated through anorthosite (white), Roseland, Virginia.



Plate 2. White reticulated feldspar (cleavelandite), Rutherford mine, $1\frac{1}{2}$ miles north of Amelia, Virginia.

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Crimora Manganese Locality

Residual deposits of manganese, iron and aluminum in Virginia have yielded many interesting and rare minerals. A more comprehensive treatment of these deposits will be given in a forthcoming Information Circular on Virginia mineral collecting localities. The best known of the manganese mines is the Crimora mine in Augusta County, which is located near the town of Crimora.

Crimora can be reached by turning north at Waynesboro from U. S. Route 250 on to U. S. Route 340. In order to reach the mine, turn east at Crimora on State Road 612.

Austinville Zinc-Lead Locality

The number of minerals, approximately 25, reported as occurring with sulfide deposits in the Ridge and Valley province, is considerably less than the number associated with sulfide deposits in the Piedmont province. However, better specimens of sphalerite, galena and some other minerals can be found here.

The Austinville mine, near the town of Austinville, Wythe County, is probably one of the oldest, continuously operating mines in the State. In order to reach this mine, proceed to Fort Chiswell on U. S. Route 11, and at Fort Chiswell turn south on U. S. Route 52, thence south on State Road 619 to Austinville.

The minerals occurring associated with sulfide deposits in the Ridge and Valley province are fully described in the following bulletins of the Virginia Geological Survey:

Currier, L. W., 1945, Zinc and lead region of southwestern Virginia: Virginia Geol. Survey Bull. 43, 122 pp.

Herbert, Paul, Jr., and Young, R. S., 1956, Sulfide mineralization in the Shenandoah Valley of Virginia: Virginia Div. of Geology Bull. 70, 58 pp.

REPRODUCTIONS OF STATE GEOLOGIC MAP AVAILABLE

For more than a year, the supply of the 1928 edition of the colored Geologic Map of Virginia has been exhausted. Within the next few weeks, black and white reproductions of this map will be available

at the office of the Division of Geology, Box 3667, University Station, Charlottesville, Virginia, for one dollar per copy. The reproductions will be on a scale of 1:500,000 or approximately 1 inch = 8 miles. Orders placed now will be filled as soon as copies are available.

SOAPSTONE INVESTIGATIONS

Field studies and geologic mapping of areas which contain potentially valuable deposits of soapstone are being inaugurated by the Division of Geology.

INCREASES IN PRICES OF TOPOGRAPHIC MAPS

The United States Geological Survey, Washington D. C., has announced that the following prices for topographic maps will become effective May 1, 1957:

The list price of topographic maps at scales 1:24,000; 1:31,680; 1:62,500; 1:125,000; and 1:250,000 (1° x 1° reconnaissance series) will be 30 cents each. The list price of topographic maps at scale 1:250,000 (new 1° x 2° series) will be 50 cents each.

National Park and other special topographic maps are individually priced. A price list is available from the United States Geological Survey, Washington 25, D. C., or from the Division of Geology.

A discount of 20 per cent will be allowed on all orders which amount to \$10 or more at the list price.

A discount of 40 per cent will be allowed on all orders which amount to \$60 or more at the list price.

RECENT TOPOGRAPHIC MAPS

The following topographic maps covering parts of Virginia are now available: Boydton, Cape Charles, Charles Town, Harpers Ferry, Kenbridge, Point of Rocks, Runnymede, Townsend, and Westcott Point. The Boydton and Kenbridge quadrangles are on a scale of 1:62,500, with a contour interval of 20 feet, and were made under the cooperative Federal-State mapping program. The others are on a scale of 1:24,000 (10 and 20-ft. contour intervals).

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